

SECTOR COMPETITIVENESS FRAMEWORKS CONSTRUCTION HIGHLIGHTS

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HIGHLIGHTS

Construction is an essential component of every economy. It is responsible for building the facilities and supportive infrastructure necessary for a nation to produce wealth and provide shelter for and deliver services to its citizens.

■ There are seven main construction phases:

- developing the concept
- securing financing
- developing the design
- obtaining regulatory approval
- building the project
- maintaining the asset once the project is complete
- demolishing the asset at the end of its life.

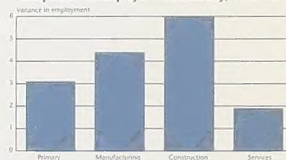
■ The Construction Sector Competitiveness Framework focusses primarily on the construction contracting industry. However, many other players and industries are involved. Real estate developers, property owners, construction material, equipment and machinery manufacturers, financial institutions, government regulators, planners, architects and engineers all play important

roles in determining the cost, quality and length of time required to complete a project.

■ Three key factors affect the industry:

- highly cyclical
- geographically diverse
- strong local presence required.

Comparison of Employment Instability, 1976-95



Source: Statistics Canada, Labour Force Survey, March 1995.

■ As a result, the industry is highly fragmented, specialized and composed primarily of small companies.

■ Key statistics (the latest available are for 1995):

- number of firms: 20 000 general contractors and 107 500 trade contractors
- size of market: \$100 billion
- employment: 724 000 workers (5.4 percent of the total Canadian work force).

■ Three major subsectors:

- **residential construction:** all dwellings from single-family homes to large apartment buildings
- **institutional, commercial and industrial construction:** all buildings that are not residential
- **engineering construction:** all non-building construction projects.

■ Each subsector is distinct:

- responds to different market forces
- uses different construction techniques and materials
- employs different labour forces.

■ Each subsector accounts for approximately one third of the total market.

■ Historically, the development of the Canadian construction industry has been closely linked to:

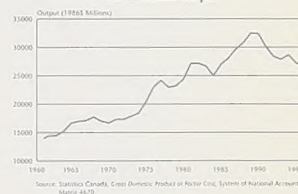
- major infrastructure undertakings, which spurred the development of engineering construction
- periods of sustained economic expansion, which spurred investment in institutional, commercial and industrial construction
- increases in the size and wealth of Canada's population, which resulted in significant growth in residential construction.

■ In the process, Canada has developed a strong, efficient, well-established construction industry with a solid reputation for reliability and innovative design. Niche strengths include cold weather construction, the design and construction of hydro-electric power projects, and the repair and renovation of salt-damaged structures.

MAJOR TRENDS

■ Due to a combination of cyclical, demographic and structural factors, the industry has endured the most prolonged period of stagnation it has had to contend with since the Great Depression of the 1930s.

Construction Output



Source: Statistics Canada, Gross Domestic Product on Factor Cost, System of National Accounts, March 1996.

■ The market for institutional, commercial and industrial real estate has been depressed by government spending cuts, excess building capacity constructed during the 1980s and slow growth in Canada's domestic economy. The market for engineering construction has been hurt by government spending cuts. The residential construction market has been hit by declines in disposable income and a reduction in the rate of household formation. In addition, all markets have been hurt by increases in real interest rates.

KEY ISSUES

Innovation

■ Innovation in construction is embodied in five main elements:

- the construction materials and systems used
- the project's design
- the construction processes employed
- the organizational methods used
- the machinery and equipment used by the design and contracting industries.



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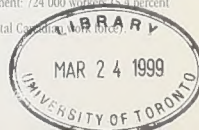
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Sector Competitiveness Frameworks are a new series of documents produced by Industry Canada in collaboration with Canada's key industry stakeholders. Each framework will examine a major Canadian industry sector; the document will explore the opportunities, both domestic and international, and the challenges facing industry sectors in Canada.

The objective of the **Sector Competitiveness Frameworks** series is to seek ways in which government and private industry together can strengthen Canada's competitiveness and, in doing so, generate jobs and growth.

In all, some 30 industrial sectors will be analyzed. Electronic copies of documents in the series are available on the Internet at the following address: <http://strategis.ic.gc.ca/scf>

■ Innovative developments often take a long time to be adopted. There are a number of reasons for this. The most important ones are:

- high risks
- fragmentation
- separation of benefits and risks
- limited knowledge
- regulations.

Trade

■ Canadian companies are beginning to do more work in neighbouring provinces and in adjacent parts of the United States. Companies are also beginning to explore opportunities outside North America. However, the industry is facing a number of problems that limit its ability to take full advantage of the opportunities presented in the international marketplace.

■ A superior knowledge of local conditions (regulations, markets, labour force, terrain, climate) generally gives local construction firms a distinct competitive advantage. Despite this, or perhaps because of this, non-tariff barriers have historically played an important role in inhibiting trade. When outside firms are attracted to an area by a particularly large project, buoyant market conditions or because they possess specialized skills, strong feelings

are generated that this work should go to local firms. If public or institutional funding is associated with the project, immense pressure will often be brought to bear to ensure that the project is structured and designed so that local involvement will be maximized.

■ Progress has been made in the Agreement on Internal Trade, the North American Free Trade Agreement and the General Agreement on Trade in Services. Nonetheless, market entry is still often impeded by local regulations, technical requirements, product standards and discriminatory approval processes.

Investment

■ Almost half of the moneys invested by business in Canada are devoted to the construction of new construction projects (i.e. buildings and engineered works) or the maintenance and repair of existing ones. Hence, the cost effectiveness, quality and speed in which this activity is carried out are important determinants of the productivity of these investments.

■ Although the Canadian construction industry is very competitive, its highly fragmented nature has often been viewed as being responsible for a number of problems. Chief among these are:

- inefficiencies arising from the division of design and construction responsibilities
- a failure to focus on life cycle costs rather than on lowest initial cost.

■ Two alternative procurement systems are being championed as offering solutions to these problems: design-build and public-private partnerships. Neither is a particularly new development, and each has its weaknesses. However, frustrations with the existing situation and an evolution in thinking about the role of government have given both greater prominence.

Human Resources

■ Employment in the construction industry is concentrated in the construction trades (59 percent), followed by management occupations (17 percent) and the clerical occupations (9 percent).

■ Training for most of the construction trade occupations is accomplished through an apprenticeship system. By establishing a co-operative system, which has avoided

the chronic under-training found in other industries, the construction unions and their employers have played a central role in creating an effective trades training system for the construction industry.

■ New federal funding formulas and the effect of fiscal cutbacks at the provincial level may require the apprenticeship system, a provincial responsibility, to adapt to operating with fewer financial resources from public sources. If system efficiencies do not increase to compensate, the shortfall may be borne by users of the training system. The challenge to the apprenticeship system is to adjust to the new funding environment through greater interprovincial cooperation and greater operating efficiencies. New training techniques, some utilizing new technology, may be of benefit in lowering the cost of training.

Sustainable Development

■ The construction industry plays a critical role in most issues concerning the environment, including:

- energy conservation
- waste management
- water quality
- indoor environments

- environmental regulations.

■ The construction industry is responding to these challenges. To achieve optimum results, an approach is required that integrates environmental issues into the development, design and construction processes. This can be achieved only through the cooperation of all stakeholders (owners, building material manufacturers, architects, engineers, contractors, regulators).

■ A number of industry sponsored initiatives are now under way in an attempt to build the consensus necessary for progress. Government as an important stakeholder, both as an owner and as a regulator, could play an important role in assisting and facilitating these efforts.

THE BOTTOM LINE

■ The Canadian market for new construction is expected to experience only limited growth in the long term. Some within industry have expressed concerns that the construction market may be entering a post-industrial phase, where much of the infrastructure and buildings required by the Canadian economy for growth have already been built. As a result, repair, renovation and retrofit work is expected to grow in relative importance.

■ The number of design-build projects and public-private partnerships is also expected to grow in relative importance. A sluggish Canadian market will probably encourage more construction contracting firms to seek out foreign market opportunities but, because of the difficulties that are likely to be experienced, the majority will continue to focus solely on the domestic market. Slow but steady progress is likely to be experienced in the area of innovation, while more substantial progress is anticipated for public-private partnerships.

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